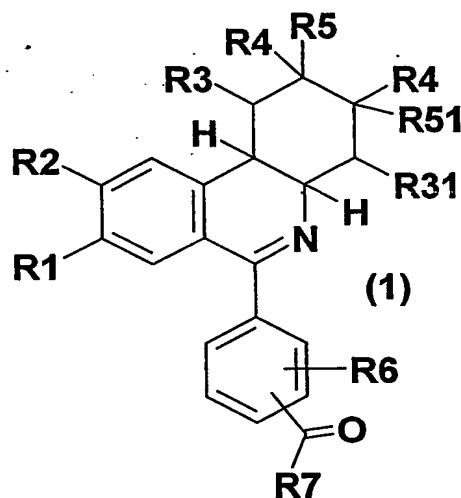


Patent claims

1. Compounds of formula 1,



in which

R1 is hydroxyl, 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-4C-alkoxy, and

R2 is hydroxyl, 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-4C-alkoxy,

R1 and R2 together are a 1-2C-alkylenedioxy group,

R3 is hydrogen or 1-4C-alkyl,

R31 is hydrogen or 1-4C-alkyl,

or in which

R3 and R31 together are a 1-4C-alkylene group,

R4 is hydrogen or 1-4C-alkyl,

R5 is hydrogen,

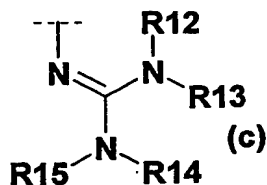
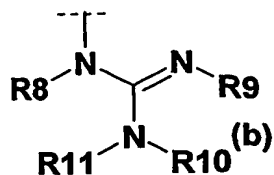
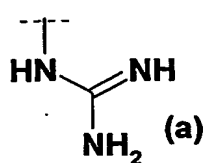
R51 is hydrogen,

or in which

R5 and R51 together represent an additional bond,

R6 is hydrogen, halogen, nitro, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R7 is a radical of formulae (a), (b), (c) or (d)



in which

if R7 is a radical of the formula (b),

either

R8, R9, R10 and R11 independently of one another are hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, cyano, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28,

or

R8 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28,

R9 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28, and

R10 and R11, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl, tetrahydro-6,7-dimethoxyisoquinolin-2-yl, 3,5-dimethyl-pyrazol-1-yl, pyrazol-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, 4-benzyl-piperidin-1-yl, thiomorpholin-4-yl or 1H-1,2,4-triazol-1-yl radical, or a piperazin-1-yl radical substituted in 4-position by R19,

or

R8 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28,

R9 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28,

R10 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28, and

R11 is Aryl1, naphthyl, phenyl, phenyl substituted by R20 and/or R21, phenyl-1-4C-alkyl or phenyl-1-4C-alkyl substituted by R22 and R23,

in which

if R7 is a radical of the formula (c),

either

R12, R13, R14 and R15 independently of one another are hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28,

or

R12 and R13 independently of one another are hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28, and

R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl, tetrahydro-6,7-dimethoxyisoquinolin-2-yl, 3,5-dimethyl-pyrazol-1-yl, pyrazol-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, 4-benzyl-piperidin-1-yl,

thiomorpholin-4-yl or 1H-1,2,4-triazol-1-yl radical, or a piperazin-1-yl radical substituted in 4-position by R19,

or

R12 and R13, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, morpholino-4-yl, 4-(1-4C-alkyl)-piperazin-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, 4-benzyl-piperidin-1-yl or thiomorpholin-4-yl radical, and

R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, morpholino-4-yl, 4-(1-4C-alkyl)-piperazin-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, 4-benzyl-piperidin-1-yl or thiomorpholin-4-yl radical,

or

R12 and R15 independently of one another are hydrogen or 1-4C-alkyl, and

R13 and R14, together and with inclusion of the N-C(=)-N structure to which they are bonded, are a hexahydropyrimidin-2-ylidene or imidazolidin-2-ylidene radical,

in which

if R7 is a radical of the formula (d),

R16 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl or R28, and

R17 and R18, together and with inclusion of the N-C(-)-N structure to which they are bonded are Aryl2,

Aryl1 is 4-methylthiazol-2-yl, benzimidazol-2-yl, 5-nitrobenzimidazol-2-yl, 5-chlorobenzimidazol-2-yl, 5-methylbenzimidazol-2-yl, 4-methylquinazolin-2-yl, benzothiazol-2-yl, benzoxazol-2-yl or pyrimidin-2-yl,

Aryl2 is 1-methyl-4-oxo-4,5-dihydro-1H-imidazol-2-yl, imidazol-2-yl, 4,5-dicyano-imidazol-2-yl, 4-methyl-imidazol-2-yl, 4-ethyl-benzimidazol-2-yl, 4-acetyl-imidazol-2-yl, 1H-[1,2,4]triazol-3-yl, benzimidazol-2-yl, 1-methyl-benzimidazol-2-yl, 1-ethyl-benzimidazol-2-yl, 5,6-dimethyl-benzimidazol-2-yl, purin-8-yl, 6-amino-7-methyl-7H-purine-8-yl, 1,6-dimethylimidazo[4,5-b]pyridin-2-yl, 1,5,6-trimethylimidazo[4,5-b]pyridin-2-yl, 1,3-dimethyl-3,7-dihydro-1H-purine-2,6-dione-8-yl, 7-ethyl-3-methyl-3,7-dihydro-purine-2,6-dione-8-yl, 1,3,7-trimethyl-3,7-dihydro-purine-2,6-dione-8-yl, thiazol-2-yl, 1,4-dihydrotetrazol-5-yl, 2H-[1,2,4]triazol-3-yl, 1,3-dihydrobenzimidazol-5-yl, 1H-tetrazol-5-yl, pyrimidin-2-yl or 4,6-dimethyl-pyrimidin-2-yl,

R19 is 1-4C-alkyl, formyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl, 1-4C-alkoxycarbonyl-1-4C-alkyl, 1-4C-alkylcarbonyl, hydroxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkyl, hydroxy-2-4C-alkoxy-2-4C-alkyl, 1-4C-alkoxy-2-4C-alkoxy-2-4C-alkyl, phenyl, phenyl substituted by R24 and/or R25, [benzo(1,3)dioxol]-5-ylmethyl, phenyl-1-4C-alkyl or phenyl-1-4C-alkyl substituted in the phenyl moiety by R26 and/or R27,

R20 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R21 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R22 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R23 is halogen, 1-4C-alkyl or 1-4C-alkoxy,
 R24 is halogen, nitro, carboxyl, 1-4C-alkyl, 1-4C-alkylcarbonyl, trifluoromethyl or 1-4C-alkoxy,
 R25 is halogen, 1-4C-alkyl or 1-4C-alkoxy,
 R26 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,
 R27 is halogen, 1-4C-alkyl or 1-4C-alkoxy,
 R28 is R29(R30)N-2-4C-alkyl wherein
 R29 and R30, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, piperazin-1-yl, 4-(1-4C-alkyl-)piperazin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, tetrahydroisoquinolin-2-yl, tetrahydro-6,7-dimethoxyisoquinolin-2-yl, 3,5-dimethylpyrazol-1-yl, pyrazol-1-yl, morpholin-4-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, 4-benzyl-piperidin-1-yl, thiomorpholin-4-yl or 1H-1,2,4-triazol-1-yl radical,
 the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

2. Compounds of formula 1 as claimed in claim 1, in which

R1 is hydroxyl, 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-4C-alkoxy, and

R2 is hydroxyl, 1-4C-alkoxy, 3-7C-cycloalkoxy, 3-7C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-4C-alkoxy,

R1 and R2 together are a 1-2C-alkylenedioxy group,

R3 is hydrogen or 1-4C-alkyl,

R31 is hydrogen or 1-4C-alkyl,

or in which

R3 and R31 together are a 1-4C-alkylene group,

R4 is hydrogen or 1-4C-alkyl,

R5 is hydrogen,

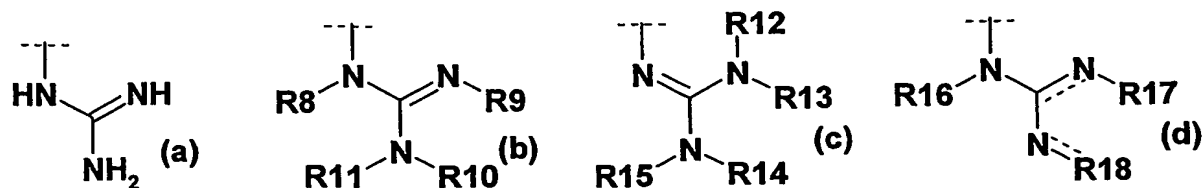
R51 is hydrogen,

or in which

R5 and R51 together represent an additional bond,

R6 is hydrogen, halogen, nitro, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R7 is a radical of formulae (a), (b), (c) or (d)



in which

if R7 is a radical of the formula (b),

either

R8, R9, R10 and R11 independently of one another are hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl,

or

R8 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, R9 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, and R10 and R11, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl, 3,5-dimethyl-pyrazol-1-yl, pyrazol-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, thiomorpholin-4-yl or 1H-1,2,4-triazol-1-yl radical, or a piperazin-1-yl radical substituted in 4-position by R19,

or

R8 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, R9 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, R10 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, and R11 is Aryl1, naphthyl, phenyl, phenyl substituted by R20 and/or R21, phenyl-1-4C-alkyl or phenyl-1-4C-alkyl substituted by R22 and R23,

in which

if R7 is a radical of the formula (c),

either

R12, R13, R14 and R15 independently of one another are hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl,

or

R12 and R13 independently of one another are hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, and R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl, 3,5-dimethyl-pyrazol-1-yl, pyrazol-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl, thiomorpholin-4-yl or 1H-1,2,4-triazol-1-yl radical, or a piperazin-1-yl radical substituted in 4-position by R19,

or

R12 and R13, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, morpholino-4-yl, 4-(1-4C-alkyl)-piperazin-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl or thiomorpholin-4-yl radical, and R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, morpholino-4-yl, 4-(1-4C-alkyl)-piperazin-1-yl, 2,6-dimethyl-morpholin-4-yl, 2,6-dimethyl-piperidin-1-yl or thiomorpholin-4-yl radical,

or

R12 and R15 independently of one another are hydrogen or 1-4C-alkyl, and

R13 and R14, together and with inclusion of the N-C(=)-N structure to which they are bonded, are a hexahydropyrimidin-2-ylidene or imidazolidin-2-ylidene radical,

in which

if R7 is a radical of the formula (d),

R16 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl, 3-7C-cycloalkylmethyl or hydroxy-2-4C-alkyl, and R17 and R18, together and with inclusion of the N-C(-)-N structure to which they are bonded are Aryl2,

Aryl1 is 4-methylthiazol-2-yl, benzimidazol-2-yl, 5-nitrobenzimidazol-2-yl, 5-chlorobenzimidazol-2-yl, 5-methylbenzimidazol-2-yl, 4-methylquinazolin-2-yl, benzothiazol-2-yl, benzoxazol-2-yl or pyrimidin-2-yl,

Aryl2 is 1-methyl-4-oxo-4,5-dihydro-1H-imidazol-2-yl, imidazol-2-yl, 4,5-dicyano-imidazol-2-yl, 4-methyl-imidazol-2-yl, 4-ethyl-benzimidazol-2-yl, 4-acetyl-imidazol-2-yl, 1H-[1,2,4]triazol-3-yl, benzimidazol-2-yl, 1-methyl-benzimidazol-2-yl, 1-ethyl-benzimidazol-2-yl, 5,6-dimethyl-benzimidazol-2-yl, purin-8-yl, 6-amino-7-methyl-7H-purine-8-yl, 1,6-dimethylimidazo[4,5-b]pyridin-2-yl, 1,5,6-trimethylimidazo[4,5-b]pyridin-2-yl, 1,3-dimethyl-3,7-dihydro-1H-purine-2,6-dione-8-yl, 7-ethyl-3-methyl-3,7-dihydro-purine-2,6-dione-8-yl, 1,3,7-trimethyl-3,7-dihydro-purine-2,6-dione-8-yl, thiazidazolyl, 1,4-dihydrotetrazol-5-yl, 2H-[1,2,4]triazol-3-yl, 1,3-dihydrobenzimidazol-5-yl, 1H-tetrazol-5-yl, pyrimidin-2-yl or 4,6-dimethyl-pyrimidin-2-yl,

R19 is 1-4C-alkyl, formyl, 1-4C-alkylcarbonyl, 2-hydroxyethyl, phenyl, phenyl substituted by R24 and/or R25, phenyl-1-4C-alkyl or phenyl-1-4C-alkyl substituted in the phenyl moiety by R26 and/or R27,

R20 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R21 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R22 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R23 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R24 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R25 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R26 is halogen, nitro, carboxyl, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R27 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

3. Compounds of formula 1 as claimed in claim 1, in which

R1 is 1-2C-alkoxy, 3-5C-cycloalkoxy, 3-5C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,

R2 is 1-2C-alkoxy, 3-5C-cycloalkoxy, 3-5C-cycloalkylmethoxy or completely or predominantly fluorine-substituted 1-2C-alkoxy,

R3 is hydrogen,

R31 is hydrogen,

R4 is hydrogen or 1-2C-alkyl,

R5 is hydrogen,

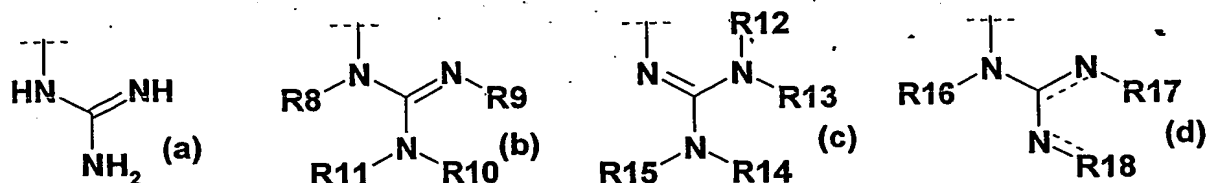
R51 is hydrogen,

or in which

R5 and R51 together represent an additional bond,

R6 is hydrogen, halogen, nitro, 1-4C-alkyl, trifluoromethyl or 1-4C-alkoxy,

R7 is a radical of formulae (a), (b), (c) or (d)



in which

if R7 is a radical of the formula (b),

either

R8 is hydrogen, and

R9, R10 and R11 independently of one another are hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl,

or

R8 is hydrogen,

R9 is hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl, and

R10 and R11, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl, 3,5-dimethyl-pyrazol-1-yl, pyrazol-1-yl, 2,6-dimethyl-morpholin-4-yl or 2,6-dimethyl-piperidin-1-yl radical, or a piperazin-1-yl radical substituted in 4-position by R19,

or

R8 is hydrogen,

R9 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl,

R10 is hydrogen, 1-7C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl, and

R11 is Aryl1, naphthyl, phenyl, phenyl substituted by R20 and/or R21, phenyl-1-4C-alkyl or phenyl-1-4C-alkyl substituted by R22 and R23,

in which

if R7 is a radical of the formula (c),

either

R12, R13, R14 and R15 independently of one another are hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl,

or

R12 and R13 independently of one another are hydrogen, 1-4C-alkyl, 3-7C-cycloalkyl or 3-7C-cycloalkylmethyl, and

R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, azecan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl, 3,5-dimethyl-pyrazol-1-yl, pyrazol-1-yl, 2,6-dimethyl-morpholin-4-yl or 2,6-dimethyl-piperidin-1-yl radical, or a piperazin-1-yl radical substituted in 4-position by R19,

or

R12 and R13, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, morpholino-4-yl, 4-(1-4C-alkyl)-piperazin-1-yl, 2,6-dimethyl-morpholin-4-yl or 2,6-dimethyl-piperidin-1-yl radical, and

R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, morpholino-4-yl, 4-(1-4C-alkyl)-piperazin-1-yl, 2,6-dimethyl-morpholin-4-yl or 2,6-dimethyl-piperidin-1-yl radical, and

or

R12 and R15 independently of one another are hydrogen or 1-4C-alkyl, and

R13 and R14, together and including the N-C(=)-N structure to which they are bonded, are a hexahydropyrimidin-2-ylidene or imidazolidin-2-ylidene radical,

in which

if R7 is a radical of the formula (d),

R16 is hydrogen, and

R17 and R18, together and with inclusion of the N-C(-)-N structure to which they are bonded are Aryl²,

Aryl¹ is 4-methylthiazol-2-yl, benzimidazol-2-yl, 5-nitrobenzimidazol-2-yl, 5-chlorobenzimidazol-2-yl, 5-methylbenzimidazol-2-yl, benzothiazol-2-yl or benzoxazol-2-yl,

Aryl² is 1-methyl-4-oxo-4,5-dihydro-1H-imidazol-2-yl, imidazol-2-yl, 4,5-dicyano-imidazol-2-yl, 4-methyl-imidazol-2-yl, 4-ethyl-benzimidazol-2-yl, 4-acetyl-imidazol-2-yl, 1H-[1,2,4]triazol-3-yl, benzimidazol-2-yl, 1-methyl-benzimidazol-2-yl, 1-ethyl-benzimidazol-2-yl, 5,6-dimethyl-benzimidazol-2-yl, purin-8-yl, 6-amino-7-methyl-7H-purine-8-yl, 1,6-dimethylimidazo[4,5-b]pyridin-2-yl, 1,5,6-trimethylimidazo[4,5-b]pyridin-2-yl, 1,3-dimethyl-3,7-dihydro-1H-purine-2,6-dione-8-yl, 7-ethyl-3-methyl-3,7-dihydro-purine-2,6-dione-8-yl, 1,3,7-trimethyl-3,7-dihydro-purine-2,6-dione-8-yl or 1H-[1,2,4]triazol-3-yl,

R19 is 1-4C-alkyl, formyl, 1-4C-alkylcarbonyl, 2-hydroxyethyl, phenyl, phenyl substituted by R24 and/or R25, phenyl-1-4C-alkyl or phenyl-1-4C-alkyl substituted in the phenyl moiety by R26 and/or R27,

R20 is halogen, nitro, 1-4C-alkyl or 1-4C-alkoxy,

R21 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R22 is halogen, nitro, 1-4C-alkyl or 1-4C-alkoxy,

R23 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R24 is halogen, nitro, 1-4C-alkyl or 1-4C-alkoxy,

R25 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

R26 is halogen, nitro, 1-4C-alkyl or 1-4C-alkoxy,

R27 is halogen, 1-4C-alkyl or 1-4C-alkoxy,

the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

4. Compounds of formula 1 as claimed in claim 1, in which

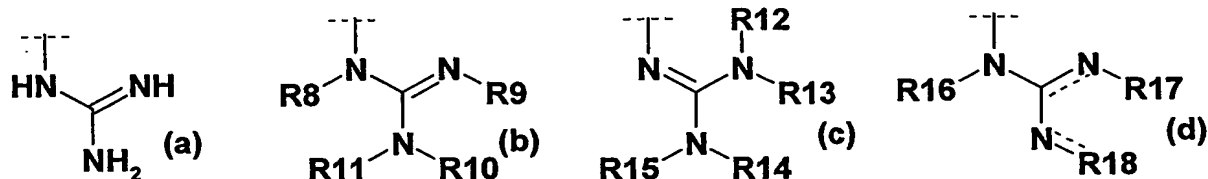
R1 is 1-2C-alkoxy,

R2 is 1-2C-alkoxy,

R3, R31, R4, R5 and R51 are hydrogen,

R6 is hydrogen,

R7 is a radical of formulae (a), (b), (c) or (d)



in which

if R7 is a radical of the formula (b),

either

R8 is hydrogen,

R9 is hydrogen,

R10 is hydrogen or 1-4C-alkyl,

R11 is hydrogen or 1-4C-alkyl,

where at least one of the radicals R10 or R11 is not hydrogen,

or

R8 is hydrogen,

R9 is hydrogen,

R10 and R11, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl or 3,5-dimethyl-pyrazol-1-yl radical, or a piperazin-1-yl radical substituted by R19,

or

R8 is hydrogen,

R9 is hydrogen,

R10 is hydrogen or 1-4C-alkyl, and

R11 is Aryl1, naphthyl, phenyl or phenyl substituted by R20,

in which

if R7 is a radical of the formula (c),

either

R12 is hydrogen or 1-4C-alkyl,

R13 is hydrogen or 1-4C-alkyl,
R14 is hydrogen or 1-4C-alkyl, and
R15 is hydrogen or 1-4C-alkyl,
where at least one of the radicals R12, R13, R14 and R15 is not hydrogen,

or

R12 is hydrogen or 1-4C-alkyl,
R13 is hydrogen or 1-4C-alkyl, and
R14 and R15, together and including the nitrogen atom to which both are bonded, are a pyrrolidin-1-yl, piperidin-1-yl, azepan-1-yl, azocan-1-yl, azonan-1-yl, morpholin-4-yl, tetrahydroisoquinolin-2-yl or 3,5-dimethyl-pyrazol-1-yl radical, or a piperazin-1-yl radical substituted by R19,

in which

if R7 is a radical of the formula (d),

R16 is hydrogen, and

R17 and R18, together and with inclusion of the N-C(-)-N structure to which they are bonded are Aryl2,

Aryl1 is benzimidazol-2-yl, 5-nitrobenzimidazol-2-yl, 5-chlorobenzimidazol-2-yl or 5-methylbenzimidazol-2-yl,

Aryl2 is imidazol-2-yl, 4-methyl-imidazol-2-yl, 4-ethyl-benzimidazol-2-yl, 4-acetyl-imidazol-2-yl, 1H-[1,2,4]triazol-3-yl, benzimidazol-2-yl, 1-methyl-benzimidazol-2-yl, 1-ethyl-benzimidazol-2-yl, 5,6-dimethyl-benzimidazol-2-yl, purin-8-yl, 1,6-dimethylimidazo[4,5-b]pyridin-2-yl, 1,5,6-trimethylimidazo[4,5-b]pyridin-2-yl,

R19 is 1-4C-alkyl,

R20 is halogen, nitro, 1-4C-alkyl or 1-4C-alkoxy,

the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

5. Compounds of formula 1 as claimed in claim 1, in which

R1 is methoxy,

R2 is methoxy,

R3, R31, R4, R5 and R51 are hydrogen,

R6 is hydrogen,

R7 is N'-(N,N-diethyl)guanidiny, 1H-imidazol-2-yl-amino, (morpholine)-4-carboxamidiny, N'-(N,N-dimethyl)guanidiny, 4-methylpiperazine-1-carboxamidiny, 1H-[1,2,4]triazol-3-yl-amino, N'-[N-(1H-benzimidazol-2-yl)]guanidiny, 2-(tetrahydroisoquinoline)carboxamidiny, pyrrolidin-1-carboxamidiny, N'-(N-phenyl)guanidiny or 3,5-dimethylpyrazol-1-carboxamidiny,

the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

6. Compounds of formula 1 as claimed in claim 1 in which

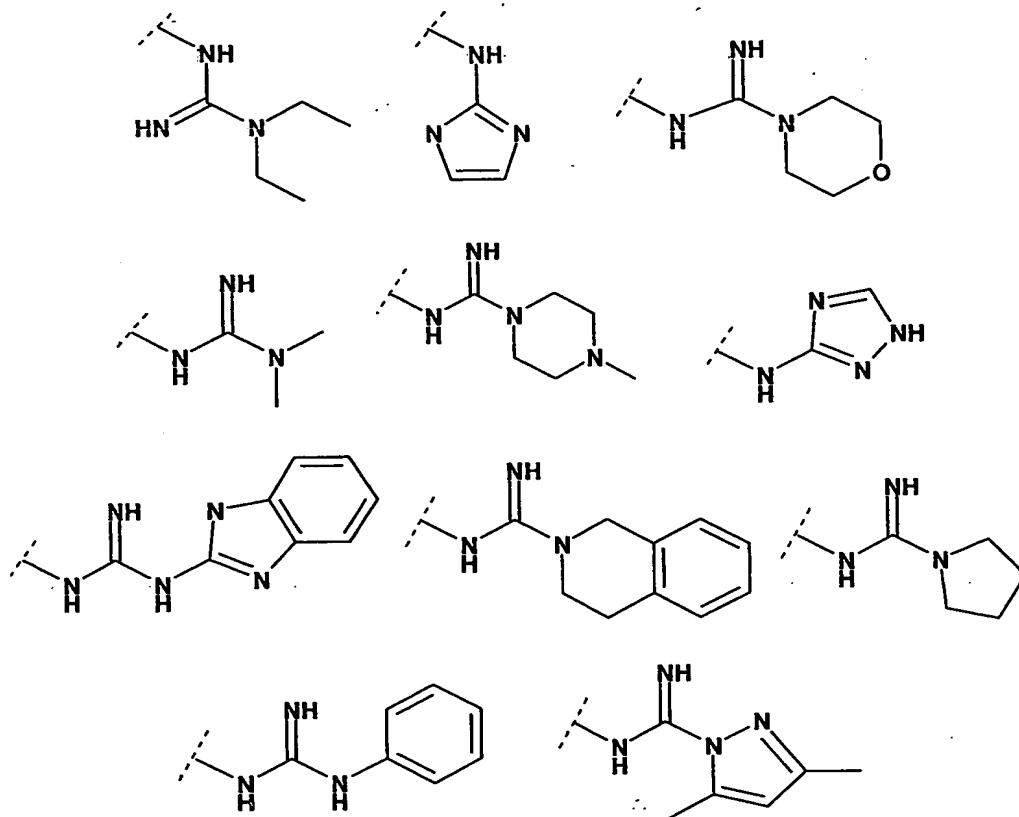
R1 is methoxy,

R2 is methoxy,

R3, R31, R4, R5 and R51 are hydrogen,

R6 is hydrogen,

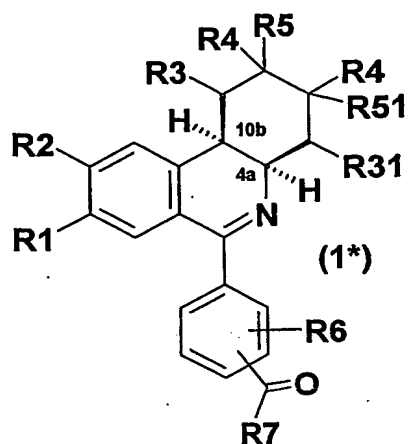
R7 is a radical selected from



the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

7. Compounds of formula 1 as claimed in claim 1, in which the hydrogen atoms in positions 4a and 10b are in the cis position relative to one another, the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts.

8. Compounds of formula 1 as claimed in claim 1, which have with respect to the positions 4a and 10b the configuration shown in formula (1*):



the salts of these compounds, as well as the N-oxides, enantiomers, E/Z isomers and tautomers of these compounds and their salts

9. Compounds of formula 1 as claimed in claim 1 for treating diseases.
10. A pharmaceutical composition comprising one or more compounds of formula 1 as claimed in claim 1 together with customary pharmaceutical auxiliaries and/or excipients.
11. The use of compounds of formula 1 as claimed in claim 1 for producing pharmaceutical compositions for treating respiratory disorders and/or dermatoses.
12. A method for treating an illness treatable by administration of a PDE4 inhibitor in a patient comprising administering to said patient in need thereof a therapeutically effective amount of a compound of formula 1 as claimed in claim 1.
13. A method for treating airway disorders in a patient comprising administering to said patient a therapeutically effective amount of a compound of formula 1 as claimed in claim 1.